

Collaborative Tools for e-Learning

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When my colleague Padma Medury and I conducted a survey on collaborative technologies and groupware in 1990, little did we know the degree to which Web-based tools would reshape and elevate this field. We discovered conferencing and collaboration tools for real-time document sharing and editing, discussion forums, brainstorming and idea generation, multimedia documents and group productivity. We categorized these tools into different levels and types of interaction, which resulted in a series of research studies published in "Electronic Collaborators: Learner-Centered Technologies for Literacy, Apprenticeship, and Discourse." Since that time, there has been an explosion of collaborative tools intended to enhance learning and productivity.

Exactly one decade after our national survey, countless e-learning tools for collaboration and teamwork were showcased at the 2000 Online Learning Conference. Unfortunately, most of these either lacked adequate funding or were not viable products to begin with. In addition, little direction was provided as to what tools might fit different collaborative needs.

Despite the confusion, there continue to be indications that we are on the threshold of an exciting new era for education, training and society at large. As momentum builds, collaborative e-learning tools are changing the way we work, learn and socialize.

Collaborative Trends

There is no mistaking the shift in society's focus from thriving on competition to the need for collaboration. Communication and conversation are among the keys to learning. As Peter Drucker often points out, we need knowledge workers who are skilled in problem-solving, collaboration and learning. Therefore, education must prepare workers for these environments.

Collaborative technologies have emerged to offer a way to familiarize learners with these new expectations and experiences. While current collaboration tools include e-mail, computer networks, whiteboards, bulletin board systems, chat lines and online presentation tools, a decade or two from now they could include extensive mentoring networks, collaboration effectiveness indices, collaborative learning portals, interplanetary chat networks and free-lance instructor exchange programs. Already, the immense array of online resources and collaborative tools has resulted in an exploding interest in e-learning among trainers, training managers, learners and the general public.

With the rise and fall of so many e-learning vendors in the present market, CLOs and training directors are faced with tough decisions about what learning management system to install as well as what prepackaged content to acquire. Whether interested in synchronous classroom

training or an LMS, there is a myriad of options, making it difficult to determine the right system for an organization. Trying to evaluate the many collaborative tools embedded within these platforms only makes the decisions more difficult.

Recent e-Learning Survey

Collaboration is making a deep impact in corporate training environments. I recently conducted a survey of e-learning in corporate training settings. (See PublicationShare.com for a free copy of this report.) Most of the 201 human resource and training personnel responding to this survey, about 15 percent of whom were knowledge managers or chief learning officers, deemed collaborative tools highly important. The vast majority of the respondents indicated that learner collaboration and sharing best practices were useful and important, but most were not yet incorporating them in training.

Nevertheless, when exploring the growth potential of collaborative tools, as indicated by differences between high-priority needs and actual use in the survey responses, it is clear that collaborative learning tools will play a significant role in the expansion of e-learning. Tools for collaborating on projects, sharing information and communication seem ripe for growth. In addition, tools to foster student analysis skills and critical thinking, as well as idea generation and originality, were in demand but rarely found in practice. The huge gaps between practice and perceived utility or importance revealed a need for collaborative and interactive tools in e-learning environments.

Of course, the ultimate goal of e-learning should be knowledge transfer to the job setting. Instead of such rich and engaging learning environments, most e-learning vendors emphasize the capabilities of their systems or tools to provide repositories of information and track learner progress through that information. Given the overwhelming focus on tracking and managing learners, it is small wonder that student attrition from online courses is often cited as more than 50 percent.

From a psychology of learning as well as an instructional design perspective, there are many issues here. Instead of managing learners, who is building e-learning tools to empower and motivate learners? Why are most e-learning systems individual when learning is a social phenomenon? Why do they typically teach discrete facts apart from the context in which they will be used? And why do most corporate training environments fail to evaluate whether learners apply the new skills on the job?

Synchronous Collaboration Tools and Live Training

Despite these questions, many have accepted as fact that we are entering a time when collaboration will be an essential part of work and learning. Among the more prominent collaborative tools in corporate training are synchronous training environments. In my survey, 35 percent of the respondents were relying on such online presentation tools for the delivery of e-learning. Technologies enable communication among learners, remote presentations from experts or instructors, online meetings and virtual classrooms. It is likely that live or

synchronous training on the Web will become more cost-feasible and effective. Tools such as Astound (Genesys), WebEx, PlaceWare, HorizonLive, LearnLinc (Mentergy), Interwise, Centra, Raindance and even NetMeeting are among those frequently mentioned.

In terms of common features and functions, synchronous Web-based collaboration platforms and tools typically include shared whiteboards and chat tools. In terms of collaboration, the chat tools nurture learner brainstorming and questioning, presenter clarifications and explanations, role-play and private one-to-one mentoring. They can foster the collection of immediate responses to an idea from learners around the globe. In addition, an electronic whiteboard can help focus learners on certain ideas or processes. Other synchronous training tools commonly found include breakout rooms, online surveys or polling, file transfer and discussion boards.

Imagine the collaborative power of such systems. On the plus side, these tools can promote knowledge transfer through expert demonstrations or modeling and immediate learner application. While there are often complaints about stability and fidelity of the video and audio elements of such training, synchronous training is especially useful in sales training related to new product announcements.

Conferencing Tools and Learning Management Systems

In addition to the synchronous training, there are opportunities for collaboration in asynchronous learning environments. Many conferencing tools (e.g., WebBoard, SiteScape Forum, FirstClass, etc.) allow learners to discuss topics at their leisure. There are no geographical or time-zone restrictions on contributions. In fact, team meetings may take place across continents. For those who want to discuss issues in real time, conferencing tools often include synchronous chat options.

Many conferencing tools are embedded in courseware platforms (e.g., Blackboard, eCollege, Lotus LearningSpace and WebCT) and learning management systems (vendors such as Docent, Saba, Plateau and THINQ). In addition, some of these tools allow instructors to create online teams for small-group work or product development with associated drop boxes. Many of them also embed real-time chat tools with a discussion forum to allow learners to collaborate and hold special events such as team meetings. Various feedback tools are often built in. Typically, however, these systems or platforms are not rich in interaction or collaboration tools since most LMS vendors assume a self-paced learner.

Work Team Tools

Business applications will increasingly include collaborative tools for instant messaging, text and audio conferencing, polling, presence awareness, file exchange and virtual workspaces. E-learning courses and activities can prepare workers to use such tools. For instance, given the lag time of e-mail exchanges, instant messaging is one way for workers to collaborate more promptly and effectively. While workers already spend billions of minutes each month in online chat environments, this skill is rarely used or addressed in e-learning environments.

In many ways, e-learning needs to catch up to collaborative work environments already in place. For instance, most successful product development teams use technology to share information and ideas related to new products or components. Electronic meeting software is emerging from Smart Technologies that can help global teams set goals, record ideas, share ideas and make key decisions. Along these same lines, OurProject.com offers a tool for collaborative project management including storing and communicating project data, predicting project costs and assigning tasks. Documentum's Collaboration Edition, which includes Team Manager, supports teams through a project lifecycle by using real-time chats, whiteboarding, threaded discussions and other collaborative tools to track schedules, manage resources, address issues and create deliverables.

Clearly, specific team or group software is proliferating. For instance, TEAMThink from Athenium is being used by the Army to help team members focus on key questions and concerns. Workplace tools such as PlanView enable team members to share data at different levels of granularity, negotiate work schedules, send review reminders, track documents, check on the status of projects and processes and assign roles. Other tools for document collaboration include TeamSite from Interwoven and Entopia's Quantum Collaborate for the workgroup.

Some believe that peer-to-peer technology will be the next major force to impact the delivery of learning. In some cases, it is already common for e-learners to hold group meetings, write and edit documents and turn in assignments electronically. In Groove, for instance, users can open additional windows on their computer screen and discuss edits, collect additional information and view shared data. And if users decide to continue their work off-line, it is automatically updated as part of a shared workspace when they log back in.

Annotation tools also offer numerous collaborative possibilities within e-learning. Web-based collaborative review is possible with tools such as those from iMarkup Solutions that allow team members to highlight information and make notes. The capability to annotate directly on Web documents or pages expands the types of online collaboration. Electronic book tools such as those from MetaText already enable students to highlight sections of digitized books as well as letting instructors leave notes for students without marking on a physical copy. For those interested in visual representations of ideas, ThoughtShare Communications' Web-based product suite, Thoughtscape, is a knowledge management tool that visually represents one's path or favorite Web links for others to browse and explore. In effect, Thoughtscape allows learners to visually represent, organize, annotate and distribute their Web journeys and personal perspectives. But are corporate training programs utilizing these collaborative work and knowledge management tools within e-learning? Again, the focus on learning management instead of collaboration and interaction does not make this likely.

Simulations are likely the next major market for e-learning collaboration. Already, companies such as WisdomTools are developing collaborative and facilitated scenario learning tools. Scenario-based simulations offer e-learners a chance to test their new knowledge or skills in a

safe environment. Learners can be exposed to potential cultural or job-related situations before they are given additional duties or are transferred to a different region or country. As simulation tools increase in authenticity and power, they will require greater opportunities for joint decision-making and role-play.

Collaborative assessments are another key growth area. As in real life, collaborative forms of assessment will force learners to negotiate solutions with peers and team partners. Their performance will determine if e-learners have internalized the new skills. In terms of trainer collaboration on assessment, some Web-based survey tools (e.g., Zoomerang, SurveyMonkey and SurveyShare) have incorporated collaborative features to share survey templates, questions and results.

A final area for e-learning collaboration is in second language learning and language translation. Companies such as GlobalEnglish and Englishtown offer online language training from experienced teachers, expert mentors, private conversation classes and peer-to-peer conversations. While English is perhaps the most popular language today, the number of online languages is growing. It is plausible that individuals will soon have online access to mentors for nearly any language they want to learn. At the same time, emerging translation tools such as Deja Vu will likely spark even greater collaborative document and product creation across languages and cultures.

With the growth of collaborative tools, online communities of practice are gaining appeal in corporate settings as workers turn to different tools for their communication and idea development needs. While not yet straightforward, online communities of practice can build relationships between workers or learners that foster identity and a sense of team success. Such tools speed up product design and development, thereby granting a competitive edge to companies that use them effectively.

Future of Collaborative Tools for e-Learning

If we look ahead another 10 years, standard collaborative technologies will include features or options for videoconferencing, chat, surveying, mentoring, joint document creation and resource sharing. Novel features might include sensor indicators of the need for collaboration as well as the availability and selection of collaborative partners. Specialists will also be available on demand to help brainstorm ideas or edit collaborative documents. And there undoubtedly will be peer and expert ratings to choose the best person for the job or to match learners to specific types of expertise.

As education needs become lifelong, advances in collaborative learning tools will impact everyone. But it is not necessarily the tools for collaboration that will be the most important or interesting, but the types of interactions made possible by these technologies. Given the collaborations that are now possible with peers, trainers, expert mentors and even artificially intelligent agents, there certainly is no shortage of collaborative tools and associated learning opportunities.

Chief Learning Officer e-Seminar

Join Curt Bonk, author of this feature article, and a panel of industry experts for a lively and informative discussion of collaborative e-learning tools.

Dec. 4, 2002

2 p.m. Eastern/11 a.m. Pacific

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